Stabilising producers' conditions to access market through cooperative institutional innovations: the case of India

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Rational for the research

India has since the late 1990s the world's largest milk producer, with 135.6 million tons in 2013.

This leading position is the result of continued growth in milk production (+ 4% / year) since the 1970s. It is at least partly due to the "white tide operation" (Operation Flood), launched by the National Dairy Development Board (NDDB) in 1964 (Alary, 1999; Dorin and Landy, 2002). The program was based on an original use of food aid: the sale of milk powder donations to domestic urban populations to finance structuring a wide cooperative network on the model experienced by AMUL in Gujarat, north -West country. This cooperative model is based on the articulation of three complementary structures: i) the village cooperatives responsible for the collection, ii) the Unions processing the milk at district level and iii) the federation marketing the products produced in the state. Ten years after the launch of this operation, 13270 village cooperatives were created. They are 162186 in 2013 according to the NDDB. The structuring of these cooperatives and the associated dissemination of inputs and services have supported the development of production, increased the surplus that can be collected and sold on the market and provided an additional income for families. Cooperatives have collected 12.5 million litres of milk in 2013, *i.e.* a little less than half of the formal circuit. Although their relative share decreases, self-consumption and informal channels, in particular in the outskirts of cities, remain the cornerstones of the Indian dairy industry amounting to 40% of the production each.

Beyond its growth, the inclusiveness of the Indian dairy sector appears as a major achievement. Three indicators can be mentioned: i) the partial spatial complementarity between the white and green revolutions; ii) the increase of per capita dairy products availability (from 120 grams per day in 1970 to over 300 today, which is close to the world average) and iii) market and services access facilitated even for very small farms (average herd of less than 3 animals) including with restricted access to land (70% of cattle and buffaloes belong to the farms with less than one hectare of cultivated land, some of them being landless).

India, little present on international markets and protected by a growing inner market isn't really exposed to the world price instability. Furthermore, having a low global level of support to its agriculture, the signing of the GATT agreements in 1994 had little effect on the level of protection of the Indian market (Dorin and Landy, 2002). Nevertheless, liberal reforms in India since the 1991 financial crisis and, especially the end of the Milk and Milk Products Order in 2003, gradually changed the functioning of the sector: criteria for private companies to enter the sector were relaxed and cooperative exclusive zones were lifted, leading to the development of the private sector. Private companies have positioned themselves on high value added segments and entered into competition with cooperatives. In addition, agriculture and agro industries, including food distribution, have been opened to FDI in June 2016. Today the growth in private collection is faster than that achieved by the cooperatives. Producers companies following a juridical status created in 2003 are also developing rapidly (Alagh, 2007; Singh and Singh 2013). How to explain this trend? Do financial and decision-reactivity provides a competitive advantage to private and producers companies? This could be an explanatory factor especially as the

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Indian cooperatives are constrained by the strong and often counter productive involvement of Administration (Dorin and Landy, 2002; Singh and Singh 2013). Is this trend risky for the inclusive model of development of the Indian dairy sector? Are PCs inclusive? These questions arise especially as specialized farms and larger (ten animals) based on irrigated forages grow presumably changing competitive relations for small and very small dairy farms.

Conceptual framework and methodology

The main research studies on the Indian dairy sector are disciplinary and focussed on a particular scale of analysis (country, farm, herd) (for example: Singh, 2000; Sharma et Gulati, 2002; Patil, 2006; Birthal *et al.*, 2008; Kumar et Staal, 2010). Nevertheless, several studies have highlighted the relevance of multi-scalar approach and interdisciplinary work to analyse transition phases, as sector dynamics rest on vertical and horizontal interactions between various production systems (Dufumier, 2007; Aubron *et al.*, 2009; Geel, 2009; Dervillé et Allaire,2014).

In this perspective, to shed light on the microeconomic impacts of macroeconomic and sectorial developments, we adopt a systemic approach and elaborate a multi-actor and multi-level framework, combining agrarian-diagnosis and markets institutional analysis. Considering that sectorial dynamics result from individual but also collective innovation strategies as well as from public action, the aim of the communication is to shed light on the coordination devices that frame conditions to access dairy markets. How are quality criteria, volume, prices and bonus set in the traditional cooperatives? Do they really contribute to the inclusiveness of the Indian dairy sector development? Are they threatened by the liberalisation? What are the conditions to access market in PC?

The work of characterization of structural (mobilization of land, irrigation, livestock, labour, equipment level, etc.) and institutional (rules governing the establishment of dairies, rules payment for milk quality...) changes is based on an analysis of the literature (journals, reports, legislation) and thorough interviews with the different actors of the sector (farmers, groups of farmers, collectors, cooperatives and private dairies, public, consumers) in the state of Gujarat in particular.

Main results

The agrarian diagnoses conducted in contrasting regions of India (Gujarat and Bihar) has clarified that the dairy farms development trajectories result from the specific pace of implementation of dairy and land policies and dissemination of technical innovations such as water access (Aubron *et al.* 2015). The spatial differentiation of these paths suggests an effect of the biophysical environment, the productive structure, the local institutions and the presence of cooperatives on the rhythm and way of development of the diary sector.

The second set of results concerns cooperative organisational innovations and highlights the role of their hybrid governance on the sustainability of the model.

Beyond the three stages that seem possible to reconcile economic efficiency and inclusion, the cooperative model, under the benevolent guidance of the NDDB, appears as a vast network of complementary structures: i) the “Mother dairy” founded in the launch of the operation flood not only supply the cities with liquid milk but also play an essential role in regulating the production via the production and storage of the powder; ii) cooperatives and their cooperation, notably with the support of well-established cooperatives (which ranked first AMUL), which play as an incubator providing expertise and brands until new cooperatives gain autonomy; iii) Villages cooperatives appear a vector of local development, providing training, social regulation and services, especially with the development of village shop; iv) development of feed manufacturing plants and their distribution at cheap rate enhancing the profitability of production and finally v) the system of rules ensuring the coherence of this hybrid network. If the Indian government does not directly support milk prices, it seems that the cooperatives, with their milk and input prices setting system, play a role in stabilizing the dairy market (at least in Gujarat where they play a very pivotal role).

Finally, the last set of results concerns the cooperative adaptive strategy to the strengthening of competition; it appears to be institutional. In 2003, the private companies legislation was amended with the addition of a chapter on Producers' company. Also supported by the NDDB and Mother Dairy, the creation of PCs in areas where traditional cooperatives haven't emerged or are inefficient aim to balance the growth of private enterprises. PCs are only open to producers and remain on the mutualist principle of one-man one vote, but, compared to traditional cooperatives, their governance is more business oriented (the role of patronage is strengthened in terms of financial incentives and representativeness, milk collection and processing is delegated to a private operators, most of the transactions are computerised to increase transparency...). In addition, in order to strengthen their competitiveness, PCs can operate at national level, have an access to more diverse financial sources, have the obligation to create reserves and may create subsidiaries. They are, however, unlike cooperatives, taxed by the state.

In a context of global instability which tends to shift the risk on the weakest link of the chain, mainly producers (Hueth and Marcoul, 2003; Jongeneel *et al.*, 2010), the originality of the Indian cooperative model and its renewal offer interesting perspectives in terms of

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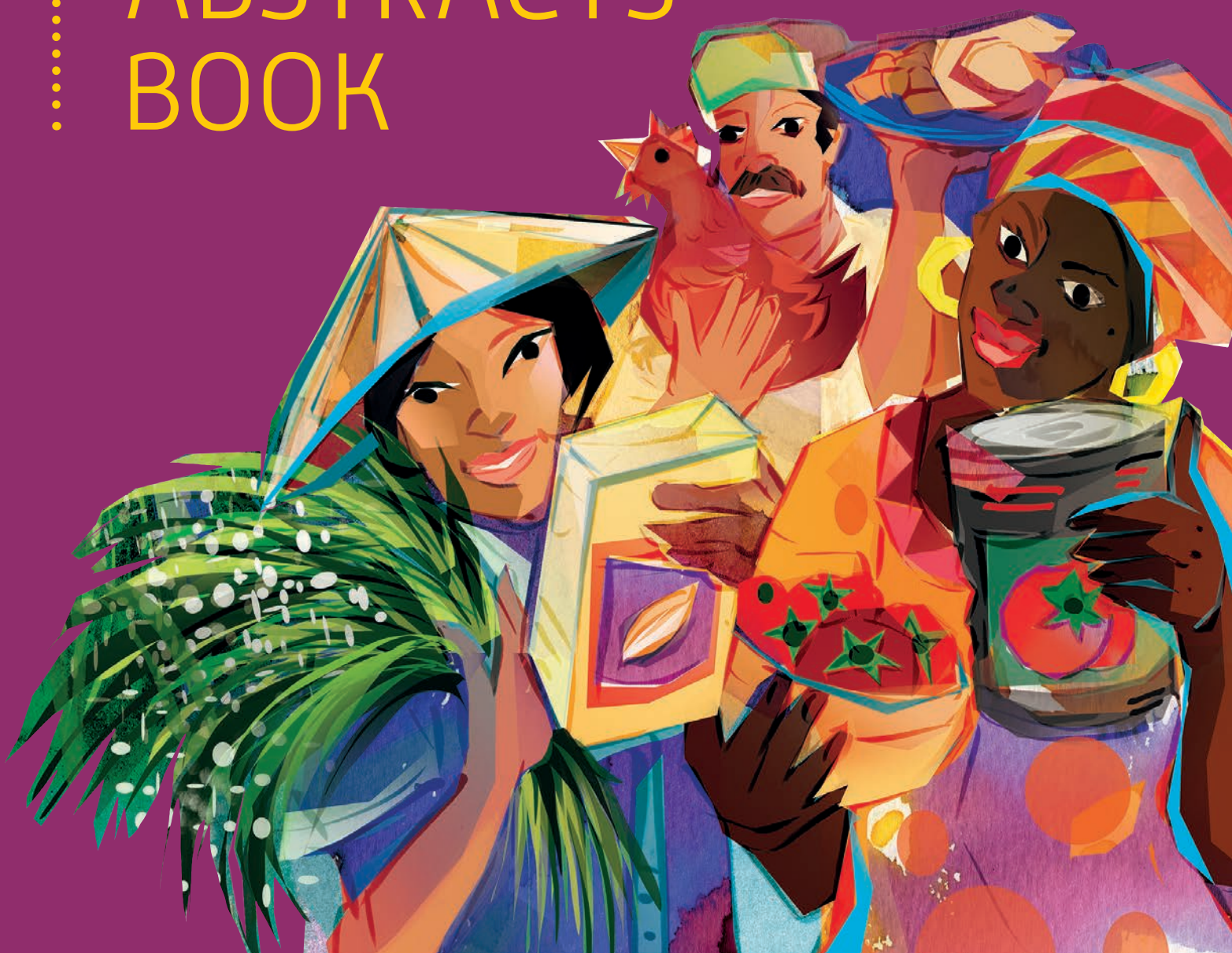

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Welcome to AC&SD 2016

On behalf of the Scientific and Organizing Committees, it is a great pleasure to welcome you to the International Conference on Agri-chains and Sustainable Development (**AC&SD** 2016). This conference aspires to widen the debate about the role of agricultural value chains towards sustainable development. Year 2015 was a critical political and diplomatic milestone: the member states of the United Nations signed a new agenda for development, with the 17 Sustainable Development Goals (SDGs) placing sustainability at the core of international efforts. Development and academic actors are since then exploring new avenues for translating the SDGs into reality and implementing global and local frameworks and partnerships. Our conference aims at joining these efforts, with the consideration that agricultural value chains form spaces where local and global challenges to sustainability connect and within which local and global actors experiment and negotiate innovative solutions.

The scientific committee has assembled a very attractive program for **AC&SD** 2016 that seeks to cover and confront the diversity of realities behind agri-chains, from localized chains, embedded in specific places, to global value chains. In the parallel sessions, transformations of these agri-chains and their connections to sustainable development will be discussed by speakers from the academia, the civil society, the private sector and decision makers. This multi-stakeholder perspective will also be brought about in the plenary sessions. Here, world renowned keynotes and panelists to three high level round tables will discuss about the role and importance of evaluation, public and private institutions and innovations at different scales for transforming agri-chains towards sustainability transitions.

This edition gathers about 250 participants from 39 countries. **AC&SD** 2016 owes a lot to the scientific and organizing committees for preparing the program, and particularly to Brigitte Cabantous, Chantal Carrasco and Nathalie Curiallet for all the logistics, as well as to our support team of Alpha Visa that we warmly thank for their help.

We wish us all a fascinating, successful, inspiring and enjoyable **AC&SD** 2016 and we very much look forward to its result and to the strengthening of both a scientific community and a community of practice to implement the outcome!!

Estelle Biénabe, Patrick Caron and Flavia Fabiano,
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Session 10

Innovations in approaches and tools for inclusive and efficient value chain development

Session 11

Linking global value chains and territories: conceptual insights for understanding and ensuring sustainability at different scales